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Note: This Executive Summary captures the main achievements, challenges and recommendations of the Action Line during the 10-year period of WSIS Implementation; this has been submitted by the Action Line Facilitator in response to the request by the participants of the Third WSIS+10 MPP meeting. The complete report on the 10-Year Implementation of the Action line was submitted to the Third WSIS+10 MPP meeting held on 17-18 February 2014 and is available at the following url: www.itu.int/wsis/review/reports/#actionline

10-Year WSIS Action Line Facilitator's Reports on the Implementation of WSIS Outcomes
WSIS Action Line - C2: Information and communication infrastructure
Lead Facilitator: ITU

Executive Summary[1]

1. Introduction

This document presents an executive summary of the review of the progress made in the implementation of Action Line C2 since the first World Summit on the Information Society (WSIS) in 2003. The review is based on the inputs and results of 8 WSIS Action Line Facilitation Meetings held in the framework of WSIS Forums and various activities done by ITU and WSIS stakeholders.

2. Achievements

Access to ICT

i. Access to ICT has improved significantly in the decade since WSIS in 2003, largely driven by wireless technology. Global mobile penetration has skyrocketed from just over a quarter in 2003 to almost 100 in 2013 far surpassing fixed telephone penetration which has been stagnant around 20. The situation is similar for broadband where subscriptions to high-speed mobile networks far surpass those for wired networks.
ii. International standards act as defining elements in the global infrastructure of ICTs and conforming to such standards avoids costly market battles over different technologies and improving interoperability. Following the first global mobile standard IMT-2000, ITU developed standards for the fourth generation of wireless systems, designating two technologies as fulfilling the high-speed

[1] Please see the full report at <http://www.itu.int/wsis/review/reports/> for details including references.

requirements of IMT-Advanced. Similarly, fixed broadband specifications including those for ADSL technology and Passive Optical Networks (PON) have been developed by ITU.

iii. The multi-stakeholder Broadband Commission for Digital Development was established at the opening press conference of WSIS Forum 2008. Consisting of private sector leaders, government policy-makers, international agencies, academia and others, the commission works towards making broadband a development priority, identifies practical ways of achieving broadband growth and promotes the use of broadband as an enabler for achieving the UN's Millennium Development Goals (MDG).

Broadband backbone infrastructure

iv. Global backbone infrastructure has grown rapidly over the last decade. International Internet bandwidth delivered over undersea fiber optic cables increased 53% a year between 2007 and 2012. Some 54 Tbps of capacity was added between 2007 and 2012 with demand in developing countries rising the fastest. Africa in particular has benefited from this growth with seven regional undersea cables alone deployed since 2009 adding 22 Tb/s of capacity, compared to just one cable in 2001.

Convergence

v. The digitization of text, data, audio and video and subsequent transmission over packet-switched Internet Protocol (IP) network infrastructure has continued unabated over the last decade. This convergence of media has been accompanied by the introduction of new access devices such as smartphones and tablet computers which did not exist at the time of the first WSIS. As a result, users have unprecedented options for how, when and where they want to access digitized information and entertainment. This migration to IP infrastructure platforms and spread of "smart" devices is generating a massive amount of traffic, resulting in 35 times more IP traffic in 2011 compared to that in 2003.

Universal service

vi. Competitive mobile markets have significantly boosted access to telecommunications services. However there continue to be pockets of un-served, mainly in areas that are deemed to be commercially unattractive. A number of countries have adopted universal service policies to extend access and reduce the digital divide. In 2012 almost three quarters of nations had adopted a universal access/service policy and almost half had an operational universal service fund.

3. Challenges

Action line C2 has helped to develop a sound framework for realizing the goal of a globally interconnected Information Society. Nevertheless there are notable challenges for realizing this vision:

1) Access to basic telephony, primarily through mobile phones, has rapidly increased. But there are gaps especially in rural and remote areas. Furthermore, over half of the world's population is still not connected to the Internet.
2) Ongoing technological evolution has placed increasing pressure on legal, policy and regulatory frameworks to adapt to the changing environment.
3) The explosion in data traffic is straining networks. There is an urgent need to develop new technologies and standards to lower the cost of broadband backbone infrastructure. Policies to ensure network openness, sharing and competition are also needed to lower costs. Innovative business models and financing arrangements such as public private partnerships will be essential for funding broadband backbone development.

4) Background data is critical for planning broadband backbone networks and minimizing duplication. The knowledge of the current situation of regional and cross-border broadband networks is essential for identifying the missing links in order to connect the unconnected.
5) The spread of wireless broadband will require effective spectrum management including utilization of underused radio frequencies to ensure adequate capacity. The transition from analogue to digital terrestrial broadcasting can help by benefitting consumers through more choice and quality in television services, and to free up radio spectrum for new services.
6) New technological and regulatory approaches to convergence between broadcasting and mobile services will be essential to ensure innovation and meeting user demand.
7) Development of affordable and easy-to-use devices is critical to expand ICT usage among lower income citizens and rural areas.

4. Recommendations

Based on the current status of Action Line C2, the following topics for the future are suggested:

a. To enhance the coverage, quality, and affordability of broadband networks, infrastructure development utilizing converged services, enhanced spectrum management, and both wired and wireless technologies are essential.
b. Develop a well-planned, well-maintained, economic and efficient broadband backbone to ensure the delivery of Internet services.
c. Increase research and development, and deployment of new technologies, to provide reliable and affordable ICT infrastructure.
d. Utilize policy and financing mechanisms such as Universal Service Funds and Public Private Partnerships, to connect and cover rural and remote areas with affordable ICT infrastructure.
e. To attract private investment, competition policies, financing, and new business models need to be studied and deployed.
f. Policies and technologies need to be considered to ensure minorities, disadvantaged and disabled people are connected to ICT networks.
g. Proper data collection, and planning and actions based on such reliable data are essential to avoid duplication of efforts.
h. To develop affordable equipment and services with economy of scale, conformity and interoperability with international standards are fundamental.
i. Emergency telecommunication services should be secured through deploying ICT for disaster relief.